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## SOME STEPS IN THE EVOLUTION OF SOCIAL OCCUPATIONS.

### IV.

SCIENTIFIC research into the nature and value of foods is not yet sufficiently developed to enable one to make positive statements regarding the effect of specific foods upon the development of the individual even at the present time. To attempt to make such statements regarding the effects of food upon the river-drift man would be still more hazardous. Yet it is possible to determine, within certain limits, the general effect of the foods of that age and the effect of the occupations by means of which food was supplied.

The energy required to meet the constant demand for muscular activity, the loss of bodily heat through lack of clothing and shelter, the excessive burden placed upon the body in digesting the available foods of that age—all united in making a heavy drain upon the low and irregular supply of energy that man was able to secure from the consumption of available foods. As long as man depended upon vegetable foods chiefly, he probably suffered as much from the necessity of consuming enormous quantities of coarse, hard, and tough foods as he did from irregularity in food supply. This fact alone, even though it were not supported by facts derived from the study of contemporary tribes, is sufficient to convince one that the digestive system of the river-drift man was relatively larger and more powerful than that of civilized man. Yet, in spite of this, the burden placed upon man's digestive system during the age was such as to leave little surplus energy to be devoted to any activity not essential to maintaining life on a plane but little removed from that of animals. The difference between man and the animals, though slight, was of the greatest importance. Man was sufficiently like the animals to begin the work of conquering them, and sufficiently unlike them to be able to reorganize his habits with

reference to advantages that he had perceived. A powerful jaw, strong teeth, and large ridges for the attachment of muscles were more significant than a great brain capacity, as long as man was destitute of implements to crush and grind food, of fire to cook it, and of tools by means of which he could apply his energy in the most economical way. Even though man's activities were devoted almost exclusively to supplying food and escaping from enemies, so great was the variety of food that he instinctively sought, and so diversified were the habits of his enemies, that in order to survive in the struggle for existence he was obliged to acquire facility in a great variety of activities. In this way man secured a physical development that was checked only by the fact that his supply of energy was low and often irregular.

If by intellectual development is meant the development of intellectual activity as an end in itself, man of the river-drift period was deprived of it. The conditions of his life did not permit him to expend energy in ways that did not yield very immediate practical results. He had no formulated knowledge. The knowledge that he possessed was embodied in his habits, which, originating in instinctive activity, gradually came under more conscious control. That man's habits functioned chiefly with reference to the need of food and protection was an inevitable consequence of the conditions of the age. Yet the elements of his environment by means of which these needs could be supplied were so diversified that man became marvelously sensitive to a great variety of stimuli. Alert to all that concerned his welfare, it mattered little that he appeared stupid with reference to all else. The needs of the present did not permit man to project the end of action into the future. He wanted food to supply a present hunger. So completely was man occupied with the needs of the moment that there was little opportunity for reflecting upon experiences of the past or of forecasting the future. Had man been more like the animals than he was, he would probably have remained absorbed in the activities of the present. It was due as much to his failures as to his successes that he was enabled to work out a method

of escaping from the bondage of the present moment, for he felt no need of analyzing the process as long as he was successful. But when food failed, man became conscious of his own weakness. Attention was thus directed to the inadequacy of the means for the accomplishment of the end. Under the stimulus of hunger man was prompted to make use of associative memory. Perhaps the suggestion came from the memory of the way in which the tiger used his teeth or claws, the urus its horns, or the wild horse its hard hoof. Such phenomena would doubtless have escaped his attention if he had not stood in need of the lesson that they conveyed. Certainly it would never have occurred to man to take a suggestion of this kind for the mere sake of improving his industrial processes. But under the stress of hunger he becomes conscious of his own weakness and alert to seize every opportunity for supplementing his own powers. But it must not be supposed that even the most pressing necessity would be sufficient to induce man to pass directly from the use of his bodily organs to the manufacture and use of tools. A great advance was made when man first consciously recognized the inadequacy of the means to secure the end, and when he restored the balance by making use of *natural forms* as tools. The modification of natural forms, so as to secure more adequate tools, marks a much more complicated and indirect mental process. It is not surprising that only faint beginnings of this art were present during the age in which the river-drift man lived, for rapid progress is not a characteristic of the early stages in the development of a people. The rapid physical growth, the early development, and the industrial independence of each individual from a very early age tended to secure fixed habits exceedingly difficult to modify; hence the conservatism so characteristic of primitive people.

Man's attitude toward nature has always been influenced by his manner of securing food. The river-drift man assumed a hostile attitude toward plants and the lower forms of animal life. The fact that he refrained from attacking the larger animals was due to his fear of them. They were objects of terror from which he fled. Yet, in spite of this fear, he instinctively felt a kinship

with these creatures. The mingled feelings of fear and kinship found expression in a system of nature-worship which has had a profound influence upon all succeeding stages of culture.

Perhaps the most valuable moral lesson of the age was that of learning to refrain from purely instinctive action. This lesson was learned under the stress of necessity. Only by lying in wait for the smaller creatures could man secure the much-needed animal food; only by inhibiting his impulse to rush into the conflict could he avoid becoming the quarry of the larger beasts of prey.

It would be unwise to assert that man's lack of courage at this time was due to the fact that the greater part of his food was supplied from the vegetable kingdom; for it is not known positively but that vegetable foods are as valuable in producing bodily strength, physical courage, and acuteness of intellect as animal foods. But it is evident that the low state of nutrition would affect man's emotional nature in such a way as to render him exceedingly irritable. Violent outbreaks of temper so characteristic of the childhood of the individual and the race are traceable in most instances to defects in nutrition.

The occupations of the river-drift man belong to the stage of the individual search for food. They can scarcely be characterized as social.<sup>2</sup> Each individual was concerned in securing his own food. There was no social stratification and no division of labor. People were scattered over widely separated areas, coming together only as social instincts common to the lower forms of animal life prompted them to meet. The family at this time consisted of the mother and child, the father being but loosely attached to this primitive group. The helplessness of the child found its counterpart in the love of the mother, who amid the hardships of the times found ways of caring for her child. Until the child's digestive organs were sufficiently developed to enable him to digest the food that she could find for him, she nourished him with her own milk—the most perfect type of food yet known. Gradually she supplemented this food with the most

<sup>2</sup> In connection with this statement read an article by PROFESSOR W. I. THOMAS, entitled "On a Difference in the Metabolism of the Sexes," in *American Journal of Sociology*, Vol. III, pp. 59-63.

nutritious and tender forms that she could find, and paved the way to the use of tough foods by chewing them until they were reduced to a form that the child could digest. As the child grew, the mother taught him to find the choicest foods that the environment supplied. When he gave evidence that he had learned the lessons, she allowed him to depend upon himself. The dependence of the young child upon his mother tended to unite them for several years. The fact that the child early became independent of his mother prevented the continuance of this relation. The early independence of the child was not so much a matter of choice as of necessity, for as soon as the mother had another child to take care of the older one inevitably was obliged to depend upon himself. The child was thus ushered into the responsibilities of adult life at a very early age and grew old prematurely. Few people among early savage tribes live to be old. This is due not merely to the tragedies resulting from their natural environment, but to the lack of social organization, and hence of any means of providing for the care of the sick and aged.

Until man learned to use fire, conditions were such as to prevent the formation of regular habits of co-operation. For a long time after its conquest people were united, not by forces within the group so much as by a common fear and a common means of protection. So powerful a force is conservatism among savage peoples that there can be little doubt but that the river-drift people followed the habits formed during the stage of the individual search for food long after some of the conditions for co-operative action were secured. The preservation of fire, however, made an imperative demand for one form of division of labor; and since it was more convenient for the women who were burdened with young children to search for food in the vicinity of the camp, they became the guardians of the fire while the men searched for food in more distant regions. It has been suggested that the differences in nutrition resulting from this division of labor between the sexes would in the course of long ages account for many of the physical differences that are now quite marked.

With the use of fire the women and children undoubtedly labored in common a greater part of the time, enjoying the advantages that come from social conversation. Real co-operation in the same process in time of need was a gradual growth which was fostered by association and by the perception of advantages gained in occasional instances of spontaneous co-operation. The instinctive craving for flesh no doubt added its weight to the effect of social conversation and pantomimic representations by the fireside at night, thus facilitating the co-operation of all of the members of the group who were free to participate in hunting the larger animals. But the old habits were strong, and it took many long years to modify them sufficiently to secure effective co-operation in hunting the larger animals. When that was accomplished, we have passed from the age of the river-drift man to that of the early cave-man.

In attempting to make use of the materials of the past, it must be remembered that they have no real significance unless related to present interests and activities. Unless the past can be made to live in the present, it may well be forgotten. This is as true of the history of our most civilized nations as it is of the generalized accounts of the Pleistocene and prehistoric periods. This fact makes it imperative for one who would make a genuine application of the materials of those remote times to consider carefully the points of likeness and difference in the attitudes of primitive man and the child, and to suspend judgment until account is taken of the nature of the conditions which in each case give value to an act and determine the form which it shall take. Since the teacher is the one who makes the real application, it is important for her to take these points of likeness and difference into account. The principal, the supervisor, the author of the text may render a more efficient service by such a knowledge than would be possible without it; but the teacher, by virtue of the nature of her work, must, consciously or unconsciously, incorporate these truths in her daily work.

Before suggesting ways of making use of the materials presented, it may be well to consider more specifically some of the

factors that were referred to in a general way in the discussion regarding the principles of selection. By so doing it is hoped that the teacher will be better able to adapt the problems that will be suggested later to the needs of the situation in which she is placed, or to make new applications of the materials presented.

The mental processes of the child and primitive man are similar in several respects. In both they are characterized by a very direct mode of response to stimuli, little or no separation between means and ends, a minimum of inhibited action, an almost complete absorption in the present, little reflection upon the past or forecasting of the future, ready shifting of attention, inability to maintain attention unless supported by a personal interest in the object of the activity or by the power of rhythm, and a distaste for intellectual activity.

Racial development during the river-drift period finds its counterpart, in several respects, in the development of the child during later infancy. The pre-tool period is a term that very well characterizes this stage of development. With both the child and the race it is a period largely occupied with acquiring the mastery of the larger physical co-ordinations. It is a period of practical activity from which separate interests have not yet emerged. Processes are still simple and direct. Tools are the organs of the body or these supplemented by such forms as can be found on the spot. It is a period in which use is made of the materials and tools that the environment affords, but only the faintest beginnings are made in changing their shape.

The attitudes of the child of seven are more nearly represented by the activities of the race when it had made some progress in making and using tools. With the power to adapt means to an end, processes are more indirect. Interest is manifested in the process itself, and in ends projected into the immediate future. This change in mental attitude in the child is a sign that he is able to make a conscious use of the experiences of others. It marks the dawn of the historic sense.

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